RAFT CLEANER

Cleangineers

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- Bobby Irgashev

- Mithilesh Ramdany

ENGINEERING PROCESS

THE PROCESS

EMPATHIZE

DEFINE

IDEATE
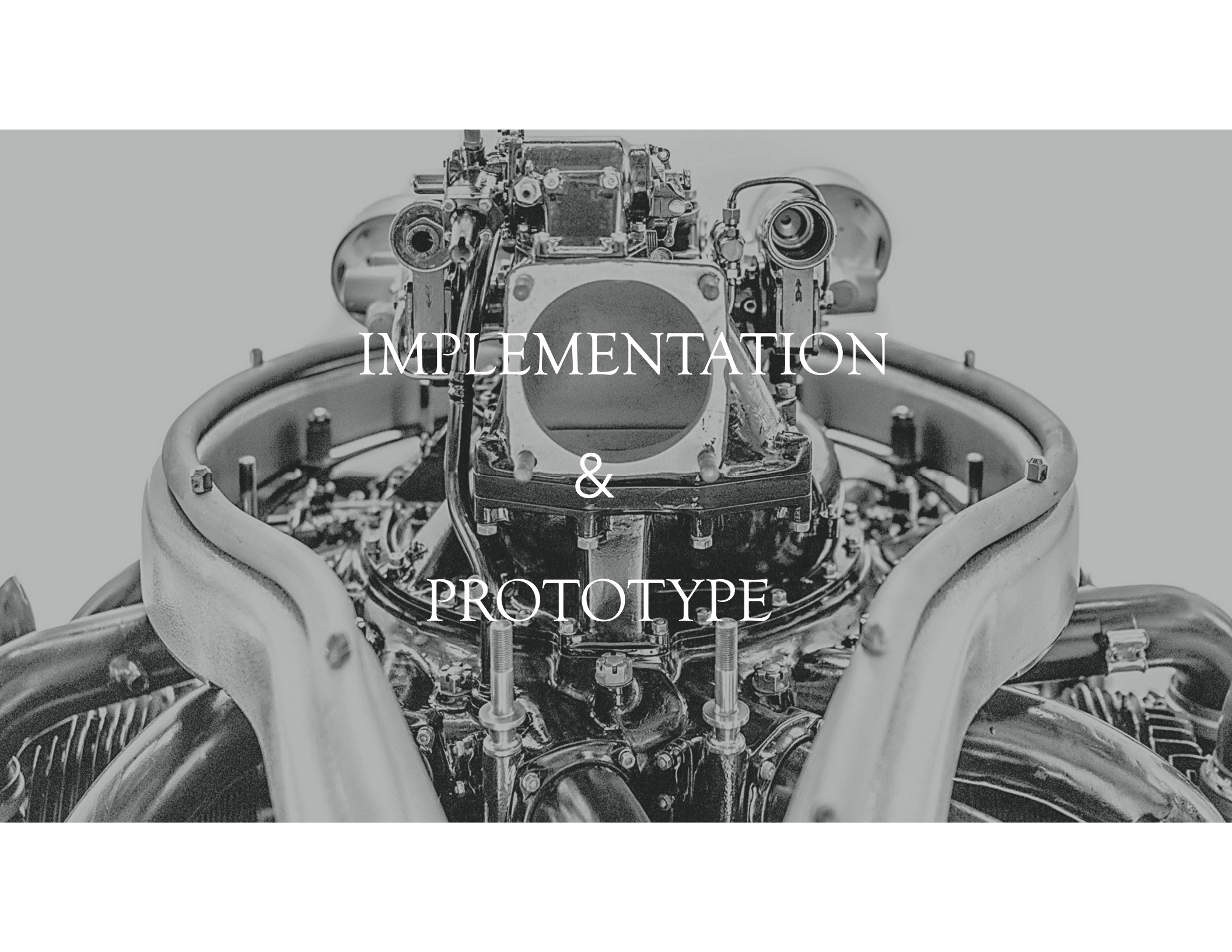
PROTOTYPE

TEST

Constraints

Client
meetings

Interpreted
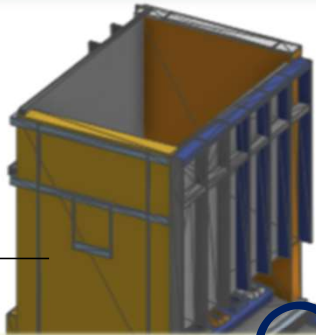needs

Possible
solutions
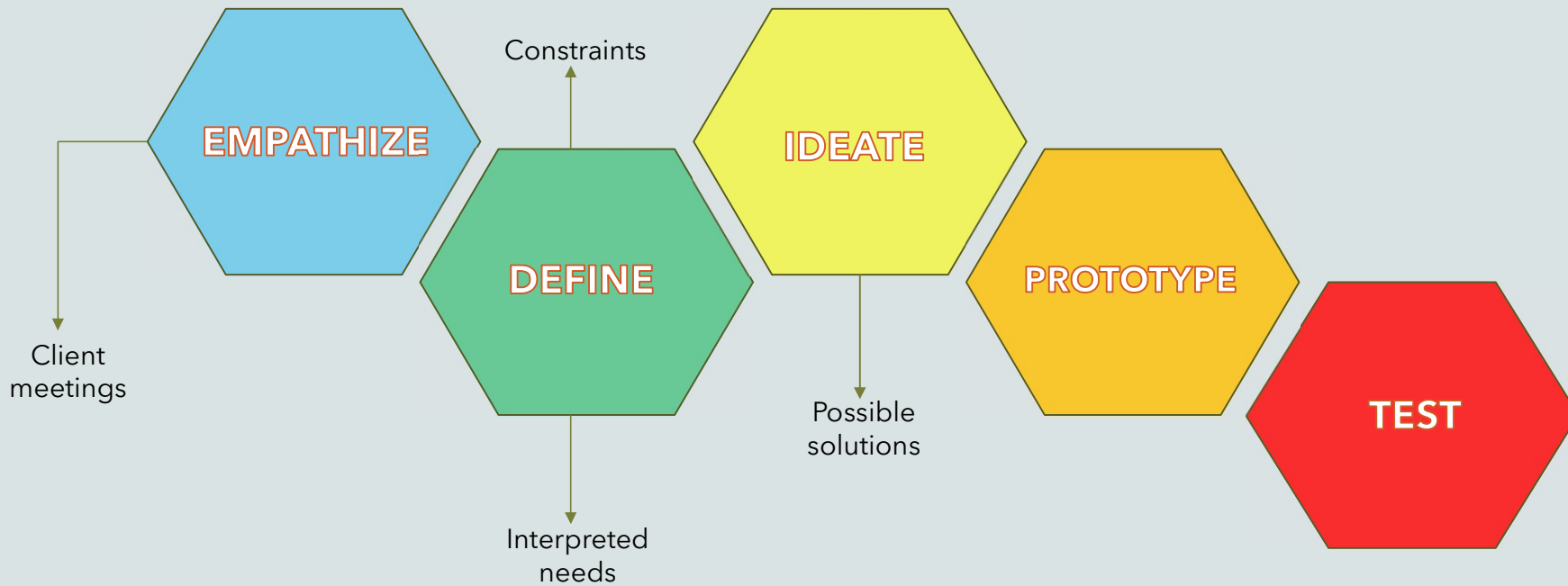
PROBLEM STATEMENT

- To design a raft board cleaner for the Growcer company for their hydroponic system, which is easy to use, automated to reduce labor requirements, and efficient and thorough in cleaning coupled with reliability.
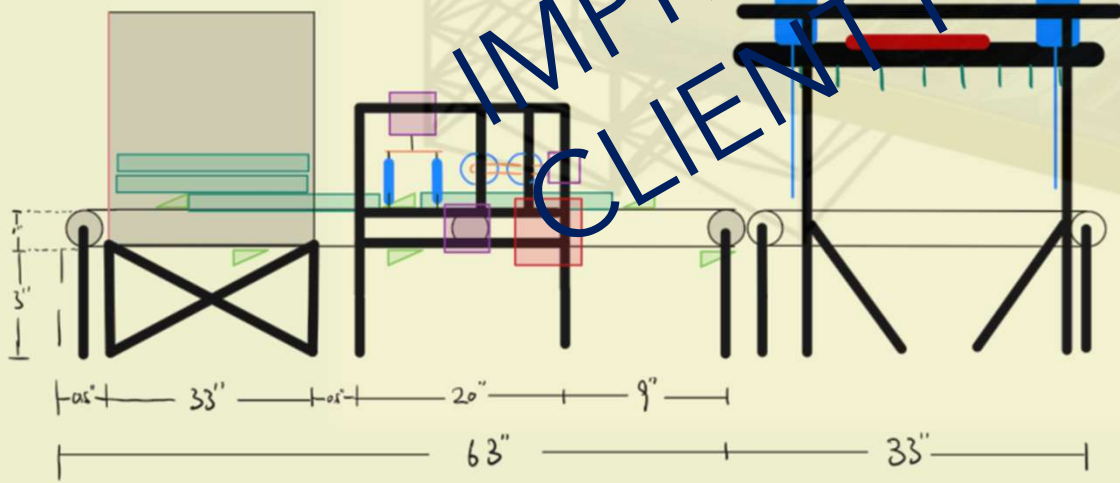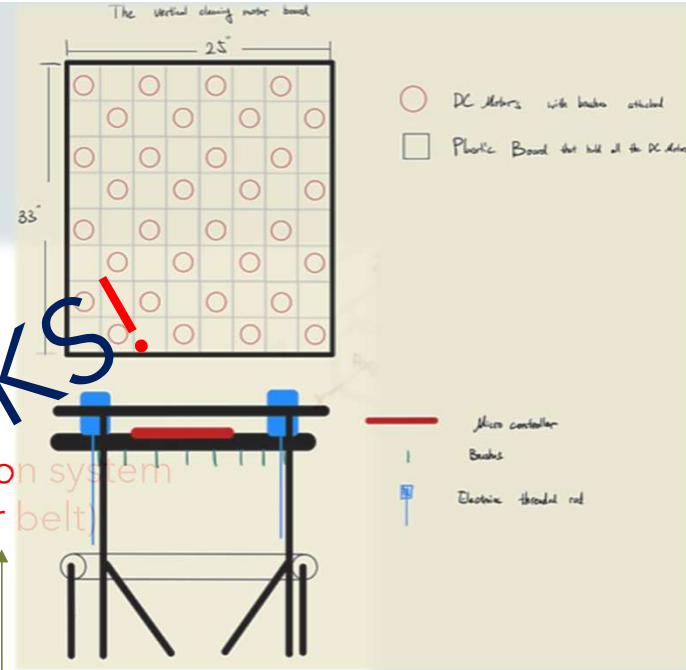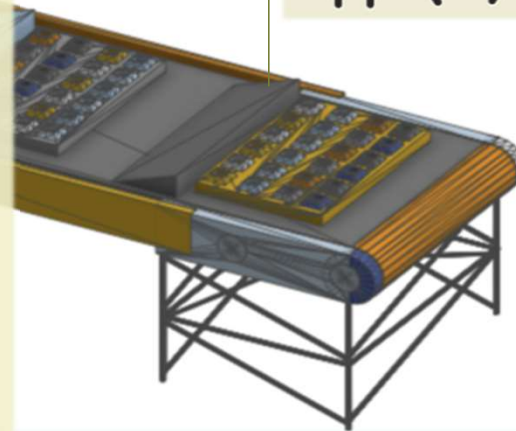
IMPLEMENTATION

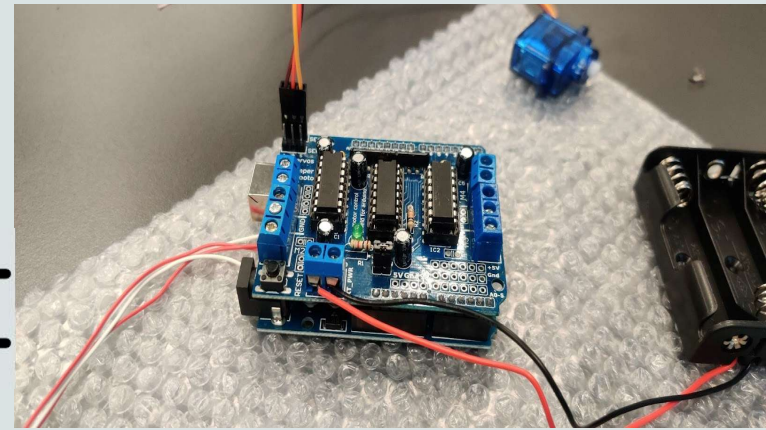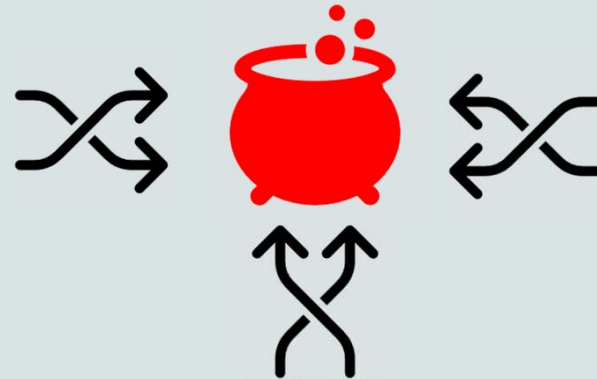&

PROTOTYPE

IMPLEMENTATION

Storage system
(Board Tank)

Distribution system
conveyor belt

IMPROVED FROM CLIENT FEEDBACKS!

PROTOTYPE

TEST RESULTS & SOME INTERESTING FACTS

TEST RESULTS

- Based on our test performed we were able to achieve a 99% cleanliness.

- $\dfrac{\text{Amount of dirt removed}}{\text{Amount of dirt placed}}$ x100

SOME INTERESTING FACTS
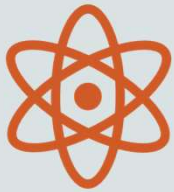
- Amount of labor work required:

    1. Prepare bucket of detergent   - 2 min
    2. Soak the rafts in sanitol   - 20*5s
    3. Load the rafts in the machine   – 3 min
    4. Clean the front and back of each rafts – 20*3 min

75 min

MORE INTERESTING FACTS
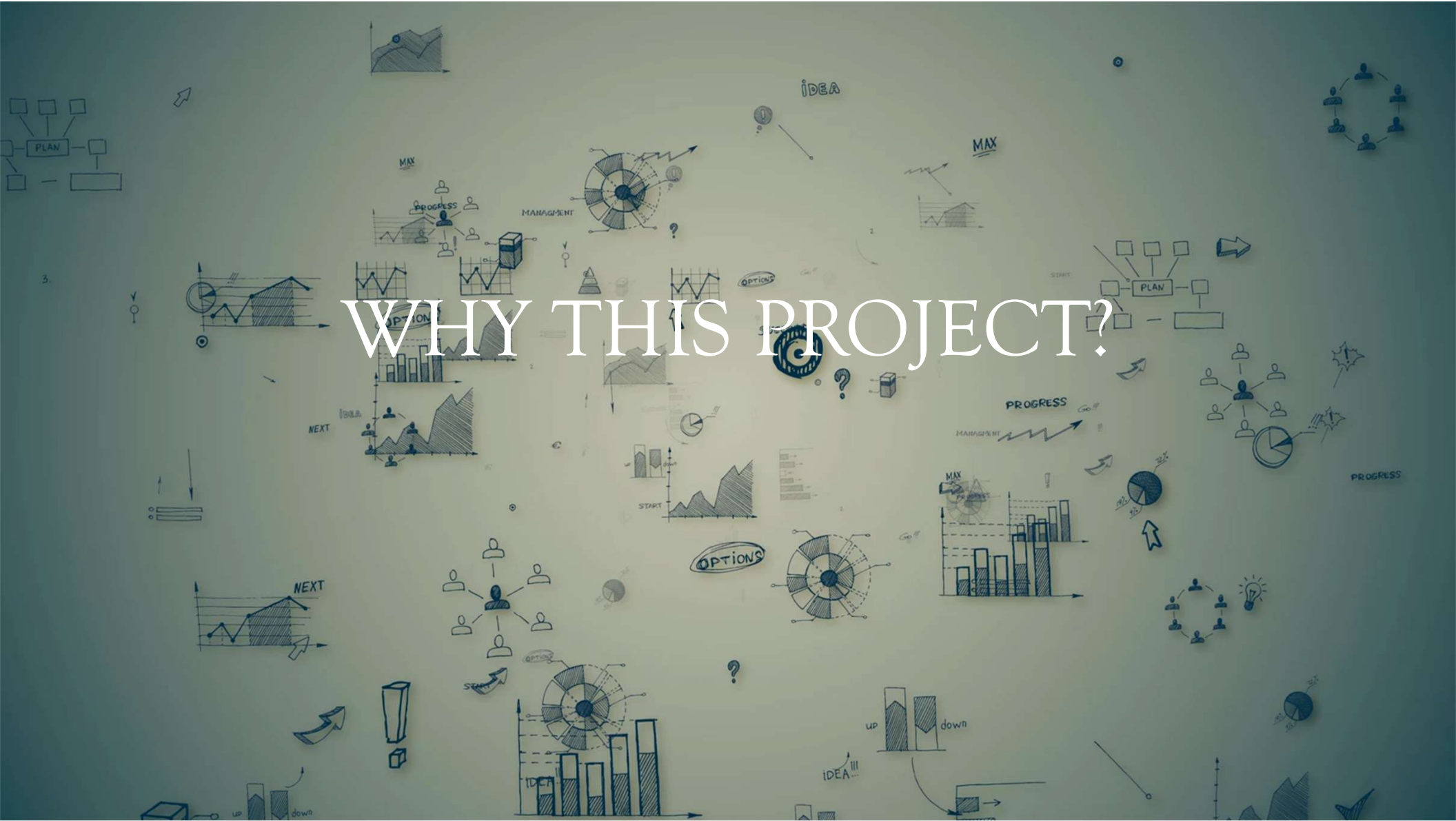
Dislodging force of algae ~ 100 N

Determination of speed of conveyor belt.

The slower it goes, the cleaner it will be.

WHY THIS PROJECT?

WHY THIS PROJECT?

- Simplicity reigns

- Little involvement
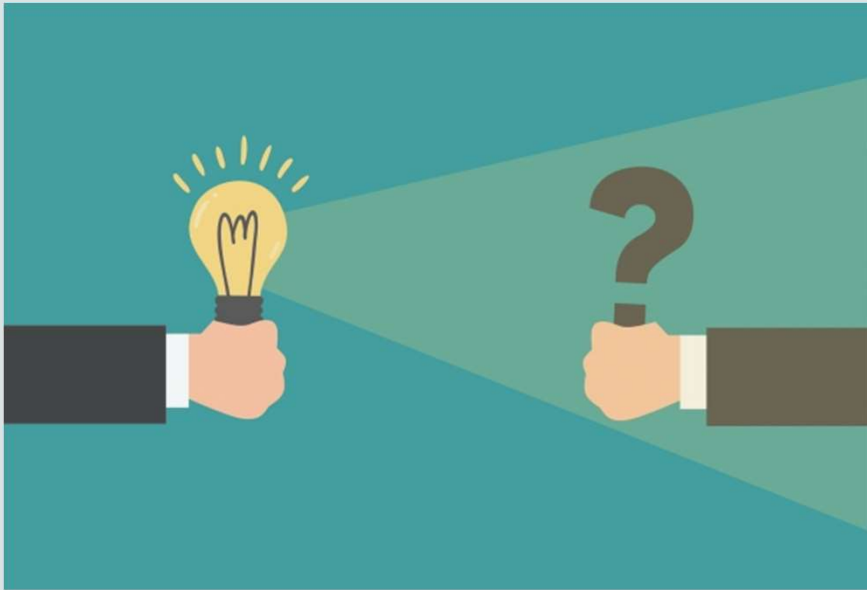
WHY THIS PROJECT?

- ONE!

- Profit - Oriented

LIMITATIONS

LIMITATIONS

- HYBRID CONCEPT

- DIRTY BRUSHES

THANK YOU!